#### <u>DODEDTIEO OE 7600</u>

1 Λ
NG ZERO
This shows 18.
lake away 0. How many are left?
This shows 9.
12 - 0 = 00000 00000

#### PROPERTIES OF ZERO



#### PROPERTIES OF ZERO

# PUTTING IT ALL **TOGETHER**

Use what you know about ZERO to find the differences.

365-365=	20-0=	4002-4002=
1489-0=	621-0=	5890-5890=
273-0=	3211-0=	2988-2988=
3000-0=	7400-7400=	446-446=
500-500=	2 2- 2 2=	8699-0=
9998-9998=	25-25=	6501-0=
	e the differences to crea Differences that Ire O Differences that Ire NOT O	te a tally chart:

For the Teacher

Level #2: One Less

The following section will provide practice and reinforcement of "one less" concepts.

The level begins with a brief review of subtracting 1 from a number between 0 and 9999.

After the review, students will learn to use their knowledge of one less to subtract larger numbers in the 10's, 100's, and 1000's.

For example, students can relate the following 4 equations:



#### ONE LESS



NUMBER	I LESS
174	173
300	
4678	
2009	
51	
6800	
431	

NUMBER	I LESS
275	
2181	
9040	
762	
54	
277	
6903	

2-A

When you subtract I, the difference is always ONE LESS than that number.



# Subtracting One With Part-Part-Wholes

Let's show one less using part-part-whole.







#### ONE LESS

### 2-E Extending the 'One Less' Facts When we see an equation like this: 70-10=\_\_\_\_, we can think to ourselves, "I know that 7-1=6, so 70-10=60." When we see an equation like this: 7000-1000=\_\_\_\_, we can think to ourselves, "I know that 7-1=6, so 7000-1000=6000." Write the difference for each equation. If the difference is less than 4999, shade the box purple. If the difference is greater than 4999, shade the box yellow: 2000-1000=\_\_\_\_ 300-100= 1000-1000= 90-10= 9000-1000= 40-10= 5000-1000= 3000-1000= 600-100= 20-10= 800-100= 500-100= 6000-1000= 9–l= 7000-1000=

8000-1000=

900-100=\_\_\_\_

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200-100=

ONE LESS



For the Teacher

Level #3: Two Less

The following section will provide practice and reinforcement of "two less" concepts.

The level begins with a brief review of subtracting 2 from a number between 0 and 9999.

After the review, students will learn to use their knowledge of subtract 2 concepts to subtract larger numbers in the 10's, 100's, and 1000's.

For example, students can relate the following 3 equations:





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#### TWO LESS

••	TWC	ESS	<u>    3-B</u>
NUMBER	2 LESS	NUMBER	2 LESS
907	905	100	
8632		2466	
88		560	
3001		5444	
779		46	
2529		9040	
234		5757	

When you subtract 2, the difference is always TWO LESS than that number.





#### TWO LESS

# Extending the **Two Less Facts**

When we see an equation like this: 80-20=, we can think to ourselves, "I know that 8-2=6, so 80-20=60."

When we see an equation like this: 8000-2000=\_\_\_\_, we can think to ourselves, "I know that 8-2=6, so 8000-2000=6000."

Write the difference for each equation. If the difference is less than 4999, shade the box light blue. If the difference is greater than 4999, shade the box red.



<u>two less</u>

# PUTTING IT ALL TOGETHER Graph It!

Find the difference for each equation. Write each equation on the graph in a space above its difference.

•	• •		
502-2	5000-2000	3001-1	4000-1000
4570-2	4568-0	600-100	3002-2
9000-2000	8000-1000	700-200	274-1
273-0	50I-I	7002-2	275-2

273	500	3000	4568	7000
		Difference		

## Level #4: Counting Back

Level 4 is all about the subtraction strategy Counting Back. Students have actually already learned this strategy in the One Less and Two Less levels, but now we are going to expand on it.

Counting back is typically one of the very first strategies that students learn for subtraction. It involves starting with the bigger number (the minuend), and counting backwards. For example, in the equation 25-3, we think: "25.....24, 23, 22."

It is important to note that counting back is ONLY an effective strategy when subtracting 1, 2, 3, or 4 from a number. Beyond that it gets too confusing, and it is too easy to make errors. For example, imagine counting back for 19-12? Not a good idea!

As I already mentioned, students have already been working with this strategy, even if they haven't yet realized it. In this level, we will work with this strategy for subtracting subtrahends of 1, 2, 3, and 4 from a minuend up to 9999.

At the end of this level students will integrate the concept of "counting back" with the previous strategies that have been learned. COUNTING BACK



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#### COUNTING BACK

# COUNTING BACK ON A Number Line

You can use a blank number line to help you count back. Let's try it for 245-3.



Use the number lines to count back.







COUNTING BACK

MORE, LESS, SAME<sup> $\Box$ </sup>



### Bonus Activity - Teacher Instructions

Include this activity at the end of Level 4 in your Subtraction Station.

This activity integrates the strategies that students have already learned: -0, -1, -2, and Counting Back.

#### Overview:

In this Bonus Activity, students choose a task card, subtract the numbers, and record the equations in their notebook or on the recording sheet.

#### Preparation:

- Print and laminate task cards.
- Make copies of recording sheets (you may wish to have students record the answers in their notebooks instead).
- To set these up, I typically cut out the title and directions and paste them on either side of a piece of cereal box cardboard. I store the center pieces in small re-sealable bags, and then keep everything in a large re-sealable bag. I've made a video showing how I make and store the center pieces that you can watch by clicking here:

https://www.youtube.com/watch?v=Z4EKxxCYnjo&feature=youtu.be





### Hot Air Balloon Subtraction Math Center



Choose an equation card. Read the equation and find the matching difference. Place the two cards together and record the equations on the recording sheet.















## **Recording Sheet**

Record the minuend, subtrahend, and difference for each equation.

Minuend	Subtrahend	Difference	Minuend	Subtrahend	Difference

## Level #5: Counting Up

In Level 5, we learn about the Counting Up strategy. Counting Up is actually closely related to the Counting Back strategy that students learned in the last level.

Counting Up can be used when subtracting two numbers that are close together. Ideally the difference should be no larger than 4. For example, counting up would work well for an equation like 12-9, but not for an equation like 12-4.

To count up, we begin with the SMALLER number (the subtrahend) and count up towards the minuend. For example, for the equation 12-9, we can start with 9 and then count up, "10, 11, 12." We counted up 3 numbers, so the answer is 3.

At the end of this level students will integrate the concept of "counting up" with the previous strategies that have been learned.

#### COUNTING UP



#### COUNTING UP



COUNTING UP	
CHOOSE THE B	EST STRATEGY: $0^{-}$
COUNT UP OR	<b>COUNT BACK?</b>
Example: 23-4 To <u>count back</u> , we start with 23 and count back like this:	To <u>count up</u> , we start with 4 and count up like this:
2322, 21, 20, 19	45, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
Which works better? <u>counting back</u>	
Now it's your turn. Which strategy works	best?
4659-4656=	2100-4=
4659-4656= counting back	2100-Ч= counting back
4659-4656= counting back counting up	2100-4= counting back counting up
4659-4656= counting back counting up Why?	2100-4= counting back counting up Why?
4659-4656= counting back counting up Why?	2100-4= counting back counting up Why? 583-580=_
4659-4656= counting back counting up Why? 449-2= counting back	2100-4= counting back counting up Why? 583-580= counting back
4659-4656= counting back counting up Why? 449-2= counting back counting up	2100-4= counting back counting up Why? 583-580= counting back counting up

#### COUNTING UP

### LET'S PRACTICE COUNTING UP!

Use the counting up strategy to solve each equation. If it helps you to use a number line, use the one below. If the difference is an ODD number, shade the box green. If the difference is an EVEN number, shade the box yellow.




# Level #6: Think Addition

Level 6 is is one of the most important levels in the Subtraction Station so far. In this level, students will learn about the very important inverse relationship between addition and subtraction. Students will use known addition facts to solve subtraction equations, and learn about fact families.

Thinking Addition is a very effective strategy that students are going to use forever. Because subtraction is sometimes a difficult concept to master, having this strategy to fall back on is crucial.

At the end of this level students will integrate the concept of "thinking addition" with the previous strategies that have been learned.

#### T N 11 Z

DDIITON							
site of addition? Take a look!							
Do you see how the same numbers are used?							
pposite of each addition equation:							
I200+I200=2400							
I500+I400=2900=							
2500+3500=6000=							
I85+300=485=							
Draw a line to match each addition equation with its opposite subtraction equation:							
480-230=250 5030-320=4710 1913-1567=346 3300-1300=2000 5509-1000=4509 907-457=450							

Г

# Let's Use NUMBER BONDS

We can use a number bond to write two addition equations and two related subtraction equations. Take a look!



Now it's your turn!



# More NUMBER BONDS

Write two addition equations and two subtraction equations for each number bond.



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THINK ADDITION								
THIM	NK ABOU							
When you see a subtraction	n equation, you can THINK /	ADDITION.						
30-10=→	THINK: "What can I add to 10 to make 302"	→ 20+10 makes 30, so → 30-10=20						
Now it's your turn!								
1000-500=	← THINK: What can	I add to 500 to make 1000?						
990-90= ← THINK: What can I add to 90 to make 990?								
456-56=←	1456-56= < THINK: What can I add to 56 to make 1456?							
8575-8000= < THINK: What can I add to 8000 to make 8575?								
2500-300=	4009-1000=	250-50=						
5724-4000=	1000-500=	300-200=						
<b>9800-800=</b> ©Shelley Gray	579-9=	600-550=						

# THINK ABOUT IT

Use the "think addition" strategy. If the difference is EVEN, shade the pencil yellow. If the difference is ODD, shade the pencil green.





# PUTTING IT ALL TOGETHER

Use any strategy that you have learned to solve the equations.



Which two equations were the hardest to solve? Shade those boxes red. Which two equations were the easiest to solve? Shade those boxes green.

### For the Teacher

# Level #1: Using Doubles

The "Using Doubles" strategy involves using what you know about the doubles addition facts to solve subtraction equations. For example, if you know that 4+4=8, then the equation 8-4 becomes easier to solve. Students can think, "I know that 4+4=8, so 8-4=4."

In this level, students will begin by reviewing the addition doubles facts. If your students are not yet comfortable with the addition doubles, this <u>needs</u> to be practiced and mastered.

Once the addition review is complete, students will move into the using doubles strategy.

After this level's brief review of doubles to 12, students will use their knowledge in order to extend the doubles equations to larger numbers in the 10's, 100's, and 1000's.

For example, students can relate the following 3 equations:



This gets more difficult with equations such as the following (students will not work with equations that have a minuend greater than 10,000, such as 12,000-6000):



At the end of this level students will integrate the concept of "using doubles" with the previous strategies that have been learned.







We can the equa 6-3=3	extend t ations be	the "USING DO elow: 60-30=30	OUBLES"	strategy for othe 600-300=300 -	er equations. 7 	Take a look at -3000=3000
8-4=4	$\longrightarrow$	80-40=40	$\rightarrow$	800-400=400 -	→ 8000	-4000=4000
2-I=I	$\longrightarrow$	▶ 20-10=10	$\longrightarrow$	200-100=100	→ 2000	-1000=1000
Explain h	ow know	ing your doubles	s facts co	ould help you with t	his equation: 80	000-4000.
Fill in the	e blanks:					
2-l=	$\_ \rightarrow$	≥ 20-10=	$\rightarrow$	200-100=	_ → 2000-	-1000=
6-3=	$\_ \rightarrow$	• 60-30=	$\rightarrow$	600-300=	_ → 6000-	-3000=
22-11=	$\rightarrow$	220-110=	$\rightarrow$	2200-1100=	_	
12-6=	_→	► I20-60=	$\rightarrow$	1200-600=		
4-2=	$\_ \rightarrow$	▶ 40-20=	$\rightarrow$	400-200=	_ → 4000-	-2000=
8-4=	$\_ \rightarrow$	▶ 80-40=	$\rightarrow$	800-400=	_ → 8000-	-4000=
There a	re 1400 p	beople at the con Show you	cert. Half r work.	of them leave. Now	how many peop	ole are left? 

# Doubles NUMBER BONDS

Complete each number bond. Then write one addition equation and one subtraction equation for each one.



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# Level #8: Using Near Doubles

The "Near Doubles" strategy involves using what you know about the <u>doubles plus one</u> and <u>doubles plus two</u> addition facts. Just like the last strategy, this strategy is dependent on an excellent understanding of addition.

If a student is presented with an equation such as 7-3=\_\_\_\_, he could think, "I know that 3+3 is 6, so 4+3 is one more (7). The difference is 4."

As another example, for the equation 12-5, a student could think: "I know that 5+5=10, so 7+5 is 2 more (12). That means that 12-5=7."

In this level, students will begin by reviewing the "doubles plus one" and "doubles plus two" addition facts. Once the addition review is complete, students will move into the "using near doubles" subtraction strategy.

This strategy will be extended to the 10's, 100's, and 1000's as well.



This gets more difficult with equations such as the following (students will not work with equations that have a sum greater than 10,000, such as 13,000-7000):



#### USING NEAR DOUBLES

JSING NEA	R DOUBLES	
	<b>DOUBLES PLUS ONE</b> Let's review the doubles plus one addition facts!	8-A
l+2=	_ < THINK: "I know that I+I=2, and then one more is 3	
2+3=	← THINK: "I know that 2+2=, and then one more	e is"
3+4=	← THINK: "I know that 3+3=, and then one more	e is"
4+5=	← THINK: "I know that 4+4=, and then one more	e is"
5+6=	← THINK: "I know that 5+5=, and then one more	e is"
6+7=	← THINK: "I know that 6+6=, and then one mor	e is"
7+8=	← THINK: "I know that 7+7=, and then one more	e is"
8+9=	← THINK: "I know that 8+8=, and then one more	e is"
9+10=	THINK: "I know that 9+9=, and then one more	e is"
IO+II=	THINK: "I know that 10+10=, and then one mo	re is"

#### LISING NEAR DOUBLES

JSING NEA	R DOUBLES	
	<b>DOUBLES PLUS TWO</b> Let's review the doubles plus two addition facts!	8-B
l+3=	$\frown$ THINK: "I know that I+I=2, and then two more is <sup>L</sup>	<b>1</b> ."
2+4=	← THINK: "I know that 2+2=, and then two mor	e is"
3+5=	← THINK: "I know that 3+3=, and then two mor	re is"
4+6=	← THINK: "I know that 4+4=, and then two mor	e is"
5+7=	← THINK: "I know that 5+5=, and then two mor	re is"
6+8=	← THINK: "I know that 6+6=, and then two mor	∽e is"
7+9=	← THINK: "I know that 7+7=, and then two mor	e is"
8+IO=	THINK: "I know that 8+8=, and then two mor	e is"
9+  =	← THINK: "I know that 9+9=, and then two mor	e is"
10+12=	THINK: "I know that 10+10=, and then two mo	ore is"

JSING NEAR DOUBLES						
FACT FAN	AILIES WITH					
NEAR	DOUBLES					
Complete the fact f	family for each near double.					
4+6=10=	9+10=19=					
+==	+==					
O+  =2 =	6+8=I4=					
+==	+==					
5+7=l2=	8+9=17=					
+==	+==					
3+5=8=	4+5=9=					
+==	+==					
Now that you know that 9-4=5, could you figure out this equation: 900-400=?						
Explain how you could figure it out:						

#### USING NEAR DOUBLES

# SUBTRACTING WITH **NEAR DOUBLES**



Solve each equation. If the equation is a "using doubles" equation, shade the box yellow. If the equation is a "using near doubles" equation, shade the box green.



# Let's Extend the Near Doubles We can extend the "USING NEAR DOUBLES" strategy for other equations. Take a look at the equations below: 90-40=50 → 900-400=500 → 9000-4000=5000 9-4=5 -8-3=5 → 80-30=50 → 800-300=500 → 8000-3000=5000 7-3=4 → 70-30=40 → 700-300=400 → 7000-3000=4000 Explain how knowing your 'near doubles' facts could help you with this equation: 7000-3000. Fill in the blanks: 8-3= → 80-30= → 800-300= → 8000-3000= 9-4=\_\_\_\_ → 90-40=\_\_\_\_ → 900-400=\_\_\_\_ → 9000-4000=\_\_\_\_\_ $5-2= \longrightarrow 50-20= \longrightarrow 500-200= \longrightarrow 5000-2000=$ The restaurant has enough meat to make 700 hamburgers. This week they sold 300 hamburgers. How many more hamburgers can they make? Write. Show your work.

#### USING NEAR DOUBLES

# Near Doubles NUMBER BONDS

Complete each number bond. Then write two addition equations and two subtraction equations for each.



### PUTTING IT ALL TOGETHER Equation Hunt

Subtract any two numbers that are touching. Remember to use the big number first. Shade them in and write the equation (with the difference) in the box.

5	400	2526	12	100	60	20	20	4459	30
148	200	I	5	900	12	3245	3245	ч	Ю
0	5000	2000	70	100	6	148	321	320	30
1000	500	100	20	Н	7000	Н	3359	I	70
3000	700	300	3333	0	2000	7	21	Ю	8000
2000	40	Ю	300	100	6000	1000	60	20	1000



## Bonus Activity - Teacher Instructions

Include this activity at the end of Level 8 in your Subtraction Station.

This activity integrates the strategies that students have already learned up to this point.

#### Overview:

In this Bonus Activity, students choose a task card, subtract the numbers, and record the equations in their notebook or on the recording sheet.

#### Preparation:

- Print and laminate task cards.
- Make copies of recording sheets (you may wish to have students record the answers in their notebooks instead).
- To set these up, I typically cut out the title and directions and paste them on either side of a piece of cereal box cardboard. I store the center pieces in small re-sealable bags, and then keep everything in a large re-sealable bag. I've made a video showing how I make and store the center pieces that you can watch by clicking here:

https://www.youtube.com/watch?v=Z4EKxxCYnjo&feature=youtu.be

## Beach Day Subtraction Math Center



## Beach Day Subtraction Math Center



Choose an equation card. Read the equation and find the matching difference. Place the two cards together and record the equations on the recording sheet.















## **Recording Sheet**

Record the minuend, subtrahend, and

difference for each equation.

Minuend	Subtrahend	Difference	Minuend	Subtrahend	Difference

# **Strategy #9**: Using Combinations of 10 and Multiples of 10

In this level, students will begin by reviewing the making 10 addition facts, and expand on that by practicing facts that can be added to make a multiple of 10. Then they will move on to subtraction, relating the subtraction facts to what they already know about addition.

For example, for the equation 10-6=, students can think, "I know that 4+6=10, so the difference is 4." For an equation such as 70-8=, students can think, "I know that 62+8=70, so 70-8=62."

At the end of this level students will integrate the concept of "using combinations of 10 and multiples of 10" with the previous strategies that have been learned.





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USING COMBINATIONS OF 10 AND MULTIPLES OF 10

# PROBLEM SOLVING WITH 9-

Mr. Williams asks his 30 students if they are happy or sad. 28 of them say that they are happy, and the rest are sad. How many students are sad?

Show your work:

The construction crew is fixing the sidewalks. There is a total of 50 meters of sidewalk to fix. So far they have fixed 9 meters. How many meters of sidewalk are left?

Show your work:

There were 40 cans of tomato sauce on the shelf, but 6 of them have been sold already. How many cans of tomato sauce are left?

CEREAL

Show your work:





Jon the Teacher

## Strategy #10: Using Combinations of 100 and 1000

In this level, students will begin by reviewing the making 100 and 1000 addition facts. Then they will move on to subtraction, relating the subtraction facts to what they already know about addition.

For example, for the equation 100-60=\_\_\_, students can think, "I know that 40+60=100, so the difference is 40." For an equation such as 1000-700=\_\_\_\_, students can think, "I know that 300+700=1000, so the answer is 300."

At the end of this level students will integrate this strategy with the previous strategies that have been learned.

#### USING COMBINATIONS OF 100 AND 1000

### Spin and Solve

Spin a number. Write it in the first box. Then solve the equation .



=100



1 () - A

### MAKING MUTIPLES OF IOO AND IOOO

Complete each equation with any numbers. Be sure to challenge yourself! Put a star beside the equations that were extra challenging to solve.

00=	l00=
00=	l00- <u> </u> =
00=	l00=
l00=	l00=
l00=	loo=
I000- <u> </u> =	I000- <u> </u> =
000=  000=	1000= 1000=
000=  000=  000=	000=  000=  000=
I000= I000= I000=	000=  000=  000=

#### Solve the problem:

1000 people are expected to come to the craft sale. So far 400 people have come. How many more people are expected to show up?

Show your work:

USING COMBINATIONS OF 100 AND 1000 PART-PART-WHOLE WITH **MUTIPLES OF 100 AND 1000** Complete each part-part-whole representation. Fill in both parts. What do you think each part represents? Create two of your own part-part-whole representations.



#### Across:

- I. 24-12 I5. 1000-400
- Ч. 100-60 16. 4000-2000
- 5. 6592-0 17. 778-100
- 7. 9837-3
- 9. 1292-2
- 12. 6000-3000
- 13. 453-1

#### Down:

- 2. 2360-4 14. 1000-300
- 3. 3432-3
- 6.800-500
- 8.800-400
- 10.2529-4
- II. 9000-1000
- 13. 4468-2

- 1. 1000 000
- 15. 120-60
- 18. 130-60

For the Teacher

### **Strategy #1**: <u>BACK</u> to a Friendly Number

In Math, the number 10 is so important. We use the number 10 to understand other numbers, as well as for a baseline when we are performing operations such as addition and subtraction. This strategy is one of these instances where we use 10.

In this level of the Subtraction Station, we are going to begin by focusing on decomposing numbers that lead to the number 10. For example, in the equation 15-6, we can think of the 6 as a 5 and a 1. So first we do 15-5 to make a 10, and then subtract one more to make 9.

After working with 10, students will extend this learning to decompose to get to any friendly number – for example: 20, 30, 40, or 100.

For example, for 24-7, students could think, "24-4=20, and then -3 more makes 17." This will introduce students to the fact that this same strategy can be extended to any set of numbers.

\*\*\*This is a difficult concept, and I encourage you to do several small group minilessons with it. It is also a great idea to use manipulatives such as base 10 blocks to illustrate how we decompose the second number.\*\*

At the end of this level students will integrate the concept of "back to a friendly number" with the previous strategies that have been learned.

![](_page_81_Figure_0.jpeg)

**Getting To A Friendly Number** 

Friendly numbers are numbers that are easy to work with, such as 10, 20, 30,

or 40. What do we have to take away to complete each equation and get to a

friendly number?

![](_page_81_Picture_5.jpeg)

36-\_\_\_

64-

45-

105-

=30

=60

=40

=100

Now it's your turn!

![](_page_81_Figure_7.jpeg)

Draw a picture to represent this equation:

Draw a picture to represent this equation:

85

116-

53-

68-

11-A

=100

=50

=60

=80

114-14=100

### Learning to Decompose

Now let's use what we know about getting back to a friendly number to subtract.

| ] - R

![](_page_82_Figure_3.jpeg)

![](_page_83_Figure_0.jpeg)

First take away 3 to get to 40.

Then take away 2

more.

84-6=

55-6=

![](_page_83_Figure_1.jpeg)

### **Practice Decomposing**

Practice decomposing the second number (the subtrahend) to solve these equations. Use the empty space to show your work.

11-D

![](_page_84_Figure_3.jpeg)

#### BACK TO A FRIENDLY NUMBER 11-E 100 Is A Friendly Number The number 100 is a FRIENDLY NUMBER because it is easy to work with. 113-\_\_ =100 =100 125-=100 109 -=100 103-=100 107-=100 |||-122-=100 105-10-=100 =100 108-=100 101-112-=100 =100 106-=100 Let's use the "back to a friendly number" strategy to get back to 100!

102-6 /\ 2 4	→ 102-2=	→ 100-4= ↑ Take away 4 more.	102-6=
107-9	→ 107-7=	→ 100-2=	107-9=
/\		↑	
7 2	Get to 100.	Take away 2 more.	
IO4-7	→ 104-4=	→ 100-3=	104-7=
/\		↑	
Ч 3	Get to 100.	Take away 3 more.	

![](_page_86_Figure_1.jpeg)

## Friendly Number **CHALLENGE**

11-G

Find the difference for each equation. Use the <u>"back to a friendly number"</u> strategy.

![](_page_87_Figure_3.jpeg)

### Putting It All Together: **Bubble Gum Subtraction**

![](_page_88_Figure_2.jpeg)

For the Teacher

### **Strategy #12**: <u>UP</u> to a Friendly Number

The strategy "Up to a Friendly Number" is closely related to the previous strategy that we learned – "Back to a Friendly Number." The difference is that in this case we count up instead of back.

For example, for the equation 34-28, we will start with the number 28. First we'll count up 2 to get to 30, and then 4 more to get to 34. 2 and 4 makes 6, so the difference is 6.

Here's another example: 301-96. We start at 96 and first count up by 4 to get to 100. Then we'll add another 201 to get to 301. 4+201 is 205, so the difference is 205.

\*\*\*This is a difficult concept, and I encourage you to do several small group minilessons with it.\*\*

At the end of this level students will integrate the concept of "up to a friendly number" with the previous strategies that have been learned.

![](_page_90_Figure_0.jpeg)

### Going <u>UP</u> To Subtract

Let's learn how we can go up to a friendly number to subtract.

12-B

EXAMPLE: <b>24-18=</b>	→ 18+ □ = 20 → 20 ↑ We start with the smaller number. First let's get to the friendly number 20. We need to add 2 to get to 20. Altog	• <b>a a 24</b> • <b>b a a b b a b b a b b b b b b b b b b</b>
<u>Step I:</u> Go up to a friendly number. <u>Step 2:</u> Add the rest.		
55-42 $\longrightarrow$ 42+=50 $\longrightarrow$ 55-42 $\longrightarrow$ 55-42	50+=55	55-42=
$62-26 \longrightarrow 26+\=30 \longrightarrow 3$ Altogether, I added	30+=62	62-26=
$100-31 \longrightarrow 3l+\=40 \longrightarrow 1$ Altogether, I added	ЧО+=IОО	100-3I= <u> </u>
88-16 $\longrightarrow$ 16+=20 $\longrightarrow$ 2 Altogether, I added	20+=88	88-16=
I30-95 → 95+=I00 → Altogether, I added	l00+=l30	130-95=

### Let's Keep Practicing

12-C

Use the up to a friendly number strategy to solve each equation.

I25-95 → 95+=I00 → I00+=I25	125-95=
Altogether, 1 added	
78-48 → 48+=50 → 50+=78	78-48=
Altogether, 1 added	
$ 02-90 \longrightarrow 90+ \_=  00 \longrightarrow  00+ \_=  02$ Altogether, I added	102-90=
76-67 → 67+=70 → 70+=76	76-67=
Altogether, I added	
2 3- 99	2 3- 99=
Altogether, I added	
$45-28 \longrightarrow 28+\=30 \longrightarrow 30+\_\_=45$ Altogether, I added	45-28=
I72-I65 → I65+=I70 → I70+=I72	172-165=
Altogether, I added	
304-292 → 292+=300 → 300+=304	304-292=
Altogether, I added	

### On Your Own!

12-D

Now use the <u>up to a friendly number</u> strategy all by yourself! Use the extra space in each box to do your work if you need to.

![](_page_93_Figure_3.jpeg)

![](_page_94_Picture_1.jpeg)

The restaurant has enough food to feed 210 people this weekend. So far, 191 people have eaten there. How many more people can eat at the restaurant this weekend?

RESTAURANT

Show your work:

There are 54 steaks and 160 chicken pieces in the fridge. So far, 42 people have ordered steak. How many steaks are left?

Show your work:

Jim is 37 years old. He has been a server at the restaurant for 19 years. How old was Jim when he started working at the restaurant?

Show your work:

## PUTTING IT ALL TOGETHER FACT FAMILIES

12-F

Complete each number bond. Then write two addition equations and two subtraction equations for each.

![](_page_95_Figure_3.jpeg)

#### Bonus Activity - Teacher Instructions

Include this activity at the end of Level 12 in your Subtraction Station.

This activity integrates the strategies that students have already learned up to this point.

#### Overview:

In this Bonus Activity, students choose a task card, subtract the numbers, and record the equations in their notebook or on the recording sheet.

#### Preparation:

- Print and laminate task cards.
- Make copies of recording sheets (you may wish to have students record the answers in their notebooks instead).
- To set these up, I typically cut out the title and directions and paste them on either side of a piece of cereal box cardboard. I store the center pieces in small re-sealable bags, and then keep everything in a large re-sealable bag. I've made a video showing how I make and store the center pieces that you can watch by clicking here:

https://www.youtube.com/watch?v=Z4EKxxCYnjo&feature=youtu.be

### Home Run Sultraction Math Center

![](_page_97_Picture_1.jpeg)

![](_page_98_Picture_1.jpeg)

Choose an equation card. Read the equation and find the matching difference. Place the two cards together and record the equations on the recording sheet.

![](_page_98_Picture_3.jpeg)

![](_page_99_Picture_0.jpeg)

![](_page_100_Picture_0.jpeg)

![](_page_101_Picture_0.jpeg)

![](_page_102_Picture_0.jpeg)

![](_page_103_Picture_0.jpeg)

![](_page_104_Figure_0.jpeg)

# Recording Sheet Record the minuend, subtrahend, and difference for each equation.

Minuend	Subtrahend	Difference	Minuend	Subtrahend	Difference

### Level #13: Subtracting Multiples of 10 and 100

In this level, students will practice subtracting multiples of 10 and 100 from numbers up to 9999. Students will use place value understanding when learning this concept.

At the end of this level students will integrate this strategy with the previous strategies that have been learned.

![](_page_107_Figure_0.jpeg)








## Level #14: Subtract 7, 8, and 9

Now that your students have learned to subtract 10 and multiples of 10, they are going to build on that knowledge to learn how to subtract 7, 8, and 9. This is a difficult concept, because there are two steps involved. It is important to understand that some of your students are going to need extra mini-lessons and one-on-one instruction to fully understand this strategy.

In this level, students are going to learn to subtract 9 by first subtracting 10, and then adding 1 to the difference. Similarly, to subtract 8, they will first subtract 10 and then add 2 to the difference. To subtract 7, they first subtract 10 and then add 3 to the difference. This will help them learn how to manipulate numbers (one of the most important aspects of mental math). You may even notice that some of your students begin to manipulate numbers in other instances as well!



#### – Note from Shelley

You might have heard of a trick called "**Magic 9**" for subtracting 9 from a 'teen' number. When you have an equation such as 17-9, you can add the digits together in the '17' and that will be the difference: 8! For 19-9, add 1+9 to make a difference of 10. For 12-9, add 1+2 to get a difference of 3! Pretty neat, right?

I agree that this is a neat trick; however, for the purposes of this Math Station I have NOT included it. I want your students (especially at this young age) to gain a really great number sense understanding, so I have included base ten blocks and number lines to teach the -9 facts. If you decide to introduce this trick once they have mastered the -9 mental math strategy, I think that is completely acceptable, but please use your best judgment. Be sure that they already have a solid mental math understanding so that you are not creating confusion.

#### SUBTRACTING 7, 8, AND 9

# Subtracting Nine 14-A WITH BASE IO BLOCKS



#### SUBTRACTING 7, 8, AND 9



SUBTRACTING 7, 8, AND 9	
Subtracting Nine	14-0
ON A NUMBER LINE	
Let's try the same -9 strategy on a number line!	
EXAMPLE: 163-9	
I53 I54 I63	
<ol> <li>First do 163-10. This is easier!</li> <li>Now add one more (because you took away an extra one in step #1).</li> </ol>	
Now it's your turn!	
85-9=	
344-9=	
102_9_	

#### SUBTRACTING 7, 8, AND 9

# Subtracting 7 and 8 WITH BASE IO BLOCKS



SUBTRACTING 7, 8, AND 9

Subtracting 7 and 8

14-E



SUBTRACTING 7, 8, AND 9	
Subtracting 7 and 8	14-F
ON A NUMBER LINE	
Let's try subtracting 7 and 8 on a number line!	
EXAMPLE: 242-8	
232 234 242	
<ol> <li>First do 242-10. This is easier!</li> <li>Now add 2 more (because you took away 2 extra one in step #1).</li> </ol>	
Now it's your turn!	
6I5-8=	
34-7=	
341-7=	
OShallay Gray	

SUBTRACTING 7, 8, AND 9

TRACTING 7, 8, AND 9	
Use a Number Line	14-6
TO SUBTRACT 7, 8, and	q

Subtract 7, 8, and 9 using the number line to help you.

	-	 
256-9=		
		_
421-7=		
345-8=		
257-8=		
832-7=		
©Shelley Gray		

SUBTRACTING 7, 8, AND 9



### 14-I PUTTING IT ALL TOGETHER **CROSS-NUMBER PUZZLE**



#### Across:

- 2. 6000-600 |4. 84-77
- 3. 100-30 15. 18-9
- 5. 43-31 16.40-4
- 6.30-10
- 7.7000-4000
- 9.5470-3
- 12.4614-2

- Down:
- 1. 700-100 10. 4390-1
- 2.7000-2000
- 4.1000-500
- 5.240-240
- 6.253-8
- 7. 3881-0
- 8.65-9

- II. 754-7
- 13.2468-0

# Level #15: Subtract 1000 and Multiples of 1000

In this level students will focus on subtracting 1000 and multiples of 1000 from a number between 1000 and 9999, using place value understanding.

At the end of this level students will integrate the concept of "subtracting 1000" with the previous strategies that have been learned.



SUBTRACT 1000 AND MULTIPLES OF 1000

## Subtracting Thousands ON A PLACE VALUE CHART

Let's use place value charts to subtract 1000 and multiples of 1000!

15-B





SUBTRACT 1000 AND MULTIPLES OF 1000

## PUTTING IT ALL TOGETHER Equation Hunt

15

Subtract any two numbers that are touching. Remember to use the big number first. Shade them in and write the equation (with the difference) in the box.

1000	2456	2456	768	125	25	6785	Ч	4000	12
600	q	5541	40	4567	1123	100	70	2000	6
100	425	5	8	Ι	3876	3867	5066	490	908
1000	427	30	2432	2441	24	12	0	50	٩
800	8	8000	1000	4325	8	546	8	q	5464
900	200	800	400	7	4456	3	6574	q	5460



## Level #16: Compensation

In the "Subtract 7, 8, and 9" level, students actually have learned the concept of compensation. Compensation means changing the subtrahend to make the equation easier, and then adjusting the difference to make up for that change. For example, when we taught students to perform a -8 equation as shown below, we were teaching them how to use compensation. We change the 8 to a 10 to make the equation easier, and then **compensate** for that change when we add 2 to the difference in the final step.

Example: $75-8 \longrightarrow 75-10= 2$ more than 65 is
In this level, we will expand on this knowledge. Students will learn to use the compensation strategy with larger numbers ending in 7, 8, and 9. Here are a couple of examples:
Example #1: 124-18> 124-20=104> 2 more than 104 is 106.
Example #2: 6542-199 → 6542-200=6342 → 1 more than 6342 is 6343.
Example #3: 245-37 → 245-40=205 → 3 more than 205 is 208.
At the end of this level, compensation will be integrated with all previous strategies.

What is Compensation?

We have already learned how to subtract 7, 8, and 9. Let's review that:

16-A



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**Compensation Practice** 

Let's practice using compensation!

16-B





TION	
USING COMPENSATION TO	16-D
SUBTRACT	

Use the number line to help you use the compensation strategy.

452-29=
238-17=
447-39=
96-58=
1240-29=
How are you feeling about this strategy? Is it getting easier for you?
OShallay Gray



rdy



### For the Teacher

# Level #17: Expanding the Subtrahend

This is the final level in The Subtraction Station!

In this level, students will learn a higher-level subtraction strategy called "Expanding the Subtrahend." To perform this strategy, students break apart the second number and subtract it from the larger number in 2 parts. Let's take a look at an example:



At the end of this level students will integrate the concept of "Expanding the Subtrahend" with all of the previous strategies that have been learned.

\*\*\* In this level, most of your assessment should be based on 2 and 3-digit equations. The most important aspect is that your students understand the process for decomposing (expanding) the second number. \*\*\*

## Let's Decompose Numbers!

17-A

Write each number in the place value chart. This is called "decomposing a number" or "expanding a number."



EXPANDING THE SUBTRAHEND

# SUBTRACT THE TENS, THEN 17-B THE ONES

We can EXPAND the smaller number (the subtrahend) to make a subtraction equation easier to solve. Take a look!



Now it's your turn

65-IH=	Step I: 65-10=
ю́Ч	Step 2: 55-4=
87-33=	Step  : 87-30=
30 3	Step 2: 5/-3=
53-23=	Step I: 53-20=
	Step 2: 33-3=
75-24=	Step I:20=
	Step 2:4=
97-53=	Step I:=
©Shellev Grav	Step 2:=

EXPANDING THE SUBTRAHEND	17_0
LET'S F	
EXPANDING TH	HE SUBTRAHEND
STEP I: Subtract the tens.	STEP 2: Subtract the ones.
83-21	56-23
Step l:=	Step I:=
Step 2:=	Step 2:=
75-54	67-32
Step l:=	Step I:=
Step 2:=	Step 2:=
96-26	35-14
Step l:=	Step I:=
Step 2:=	Step 2:=
95-72	87-41
Step l:=	Step I:=
Step 2:=	Step 2:=
68-22	76-35
Step l:=	Step I:=
Step 2:=	Step 2:=

#### EXPANDING THE SUBTRAHEND

XPANDING THE SUBTRAHEND	1
EXPANDING	THE SUBTRAHEND
WITH BIG	GER NUMBERS
When we work with bigger numbers, we use into parts and subtract one part at a time. 859-735= /   \ 700 30 5	e the exact same steps. We break the second number Step 1: 859–700=159 Step 2: 159–30=129 Step 3: 129–5=124
Now it's your turn!	
562-33I= / \ 300 30 I	Step I: 562-300= Step 2: 262-30= Step 3: 232-I=
875-5 3= / \ 500  0 3	Step I: 875-500= Step 2: 375-10= Step 3: 365-3=
8517-1314=	Step I: 8517= Step 2: 7517= Step 3: 7217= Step 4: 7207=
639-225= /   \	Step I: 639= Step 2: 439= Step 3: 419=

# LET'S PRACTICE EXPANDING THE SUBTRAHEND

5528-4204	7464-3141
Step l:=	Step l:=
Step 2:=	Step 2:=
Step 3:=	Step 3:=
Step Ч:=	Step 4:=
86-32	75-23
Step l:=	Step l:=
Step 2:=	Step 2:=
859-328	436-313
859-328 Step I:=	436-313 Step I:=
859-328 Step I:= Step 2:=	436-313 Step I:= Step 2:=
859-328 Step I:= Step 2:= Step 3:=	436-313 Step I:= Step 2:= Step 3:=
859-328 Step I:= Step 2:= Step 3:= 429-215	436-3 3 Step I:= Step 2:= Step 3:= 742-32
859-328 Step I:= Step 2:= Step 3:= 429-215 Step I:=	436-313 Step I:= Step 2:= Step 3:= 742-321 Step I:=
859-328 Step I:	436-3l3         Step !:

### EΧ

(PANDING THE SUBTRAHEND		17_ <b>_</b>
Probl	em-Solving	
4526 tickets were sold for the event.	3215 people showed up. How many peo	ple bought
lickels, but did not come?		
- Show your work.	Wrife an answei	r senfence.
The bake sale raised a total of \$2387 the rest on Tuesday. How much money <b>- Show your work</b> .	for the school! They made \$1254 of th did they raise on Tuesday? Write an answe	nat on Monday, and r sentence.
Altogether in January and February, tl those pages in January, and the rest ir	he Grade 4 class read 3518 pages! The n February. How many pages did they	y read 2305 of read in February?
– Show your work. ————	Write an answei	r sentence. ———

# PUTTING IT ALL TOGETHER 17-G Subtraction Frenzy!

100-40=	4000-2000=	8694-3000=
3390-I=	600-300=	456-9=
234-28=	3445-200=	900-500=
542-211=	4387-4387=	8000-1000=
1254-4=	22 3- 3=	50-44=

#### Complete the subtraction tables:

-100	
445	345
9214	
6363	
2000	
1023	

-300	
539	
1299	
6482	
600	
857	

-q	
32	
751	
86	
3722	
1234	

-8	
56	
354	
1290	
3245	
16	

-2000	
3592	
5491	
4000	
9090	
2645	

-19	
234	
47	
692	
82	
1243	

## Bonus Activity - Teacher Instructions

Include this activity at the end of Level 17 in your Subtraction Station.

This activity integrates all of the strategies in The Subtraction Station.

#### Overview:

In this Bonus Activity, students choose a task card, subtract the numbers, and record the equations in their notebook or on the recording sheet.

#### Preparation:

- Print and laminate task cards.
- Make copies of recording sheets (you may wish to have students record the answers in their notebooks instead).
- To set these up, I typically cut out the title and directions and paste them on either side of a piece of cereal box cardboard. I store the center pieces in small re-sealable bags, and then keep everything in a large re-sealable bag. I've made a video showing how I make and store the center pieces that you can watch by clicking here:

https://www.youtube.com/watch?v=Z4EKxxCYnjo&feature=youtu.be

### "Springtime" Math Center


### Directions

Choose an equation card. Read the equation and find the matching difference. Place the two cards together and record the equations on the recording sheet.



















#### **Recording Sheet**

Record the minuend, subtrahend, and

difference for each equation.

Minuend	Subtrahend	Difference	Minuend	Subtrahend	Difference

#### Putting It All Together

Your students have now learned all of the strategies in The Subtraction Station. By now your students should have a good understanding of many different mental math strategies. They should be working on using the most effective and efficient one for each equation.

This final level is included as a "Putting It All Together" level. In this level, students will practice all of the strategies that they have learned. They will practice choosing the strategy that is best. You may also notice that by this time your students are developing automaticity with some of the facts. This means that they may be starting to just "know" the fact, without even thinking too much about it. This is fantastic, and is what all of your students should be striving for.

## How Did You Solve That?

Solve each equation using a strategy that you have learned. Then explain how you solved it.

18-A

3542-18=		6000-3	3000=
How did you solve this?		How did you solv	ve this?
4521-2000=	_	413-	-6=
How did you solve this?		How did you solv	ve this?
4632-0=	4568-30	00=	457-9=
1000-500=	1000-750	)=	7640-1=
240-120= 5722-19=_			4766-600=
7455-28= 6100-100		=	2453-37=

## **Equation Hunt**

18-

Subtract any two numbers that are touching. Remember to use the big number first. Shade them in and write the equation (with the difference) in the box.

2442	442	100	6573	2234	48	16	8	8000	600
50	900	400	29	2234	6049	100	745	4000	100
47	500	1000	500	546	28	96	322	4593	27
4572	4000	56	17	323	22	9042	140	8	2267
10	435	4233	100	90	II	1021	0	4378	ч
5	7	100	1246	q	8	3462	Ι	1243	1000
3490	4574	Ιq	Ю	20	16	3000	1000	q	600
2	2000	8	500	200	100	40	3443	18	28

50-47=3	==	=
3462-1=3461	===	=
==	=	==
==	===	=
==	<b>=</b>	<b>=</b>
==	=	<del>_</del>
==	===	=
==	=	==

#### PUTTING IT ALL TOGETHER

# Solve the Problems

In one day, the bread factory ships out 1250 loaves of bread. Today, however, one of the machines broke down and the shipment is down by 68 loaves. How many loaves of bread were shipped out today?

- Show	your	work.
--------	------	-------

Write an answer sentence.

18-C

Every year, the children in two schools plant trees on the school yards. School A has planted 267 trees. School B has planted 479 trees. How many more trees has School B planted than School A?

Show your work.

Write a story problem for this equation: 1725-49=	⊾ Solve it.

PUTTING IT ALL TOGET	HER	1 QN
S S	ubtraction	Action!
256-18=	289-244=	8877-8877=
50-43=	4354-4=	456-38=
7000-1000=	457-124=	4721-500=
8900-4000=	6500-2000=	5487-2263=
24-12=	4536-8=	345-25=
6 23 159 47 468 00 -17 477 65 19 73 123 159 47 468 100 -17 177 65 19 73 123 159 107 177 177 177 177 177 177 177	btracting is	20 130 100 70 71 249 58 186 75 165 127 186 75 165